Angiogenesis-Based Cancer Therapeutic

Ref. No. E-230-2011

Keywords: Therapeutic, cancer, chemotherapy, macular degeneration, diabetic retinopathy, angiogenesis, VEGF-A, hepatocyte growth factor (HGF) heparin sulfate proteoglycan .

Summary:
The Urologic Oncology Branch of the Center for Cancer Research (CCR) at the National Cancer Institute (NCI), seeks parties interested in collaborative research to further co-develop antagonists to VEGF-A and hepatocyte growth factor (HGF) that block signal transduction and associated cellular responses.

Technology:
Vascular Endothelial Growth Factor-A (VEGF-A) is an angiogenic agent that drives blood vessel formation in solid tumors and other diseases, such as macular degeneration and diabetic retinopathy. Several therapies that target the ability of VEGF to stimulate angiogenesis have been approved. These therapies regulate VEGF-A activity by binding VEGF-A, thereby blocking VEGF-A from binding to its receptor on target cells. This technology utilizes a different approach to regulating VEGF-A activity by providing a VEGF-A protein antagonist that is produced by engineering native VEGF-A protein. The engineered VEGF-A protein disrupts heparin sulfate proteoglycan binding to the VEGF-A/VEGF receptor complex, an activity that is essential for the angiogenic properties of native VEGF-A. The antagonist has a binding affinity for both FLT-1 (VEGFR-1) and KDR/FLK-1 (VEGFR-2) that is equivalent to that of native VEGF-A and specifically antagonizes all VEGF-A-stimulated signaling events.

Potential Commercial Applications:

- Therapy for solid tumors or other diseases associated with angiogenic activity modulated by Vascular Endothelial Growth Factor-A expression.

Competitive Advantages:

- Cost effective in terms of production
- High Specificity/Selectivity

Development Stage: Pre-clinical, animal data available.

Patent Status: U.S. Patent Application 61/639,230 filed April 27, 2012

Contact: Please submit an information request form at http://techtransfer.cancer.gov or contact John Hewes, Ph.D., (301) 435-3121, hewesj@mail.nih.gov and include the reference number indicated above.

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